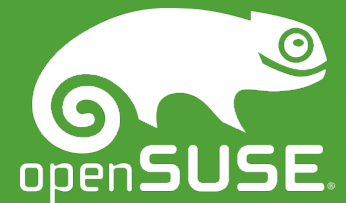


openQA

features – capabilities – bugs

Ondrej Holecek /*aaannz*/

oholecek@suse.com





What makes openQA

User focused

- Watching the screen

User focused

- Watching the screen
- Keyboard and mouse input



User focused

- Watching the screen
- Keyboard and mouse input
 - Virtually limitless test scenarios

Wide range of SUTs

- Virtual machines FTW!
 - QEMU (x86_64, ARM), libvirt, PowerVM, s390



Wide range of SUTs

- Virtual machines FTW!
 - QEMU (x86_64, ARM), libvirt, PowerVM, s390
- Reality still real though
 - IPMI, ADDERLink



AI breeding ground (aka multi-machine)

- Serial dependency



AI breeding ground (aka multi-machine)

- Serial dependency
 - validation test jobs
 - test job preparing environment for others

AI breeding ground (aka multi-machine)

- Serial dependency
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 - test job preparing environment for others
- Parallel dependency



AI breeding ground (aka multi-machine)

- Serial dependency
 - validation test jobs
 - test job preparing environment for others
- Parallel dependency
 - client-server scenarios
 - High-Availability testing

AI breeding ground (aka multi-machine)

- Serial dependency
 - validation test jobs
 - test job preparing environment for others
 - Parallel dependency
 - client-server scenarios
 - High-Availability testing
- openQA scheduler does the job management



“Is There Anybody Out There?”

- QEMU user networking
 - no SUT-SUT communication
 - no inbound access
 - outbound access allowed

“Is There Anybody Out There?”

- QEMU user networking
- TAP devices
 - manual configuration required
 - all-you-can-do



“Is There Anybody Out There?”

- QEMU user networking
- TAP devices
- Open vSwitch
 - initial configuration required
 - dynamically creates network for MM tests
 - SUT-SUT communication
 - allows network between worker nodes

Shiny user interface



All Tests

Job Groups ▾

Login

Welcome to openQA at SUSE

- » [More information regarding openQA](#)
- » [Description of internal setup and administration](#)
- » [IRC channel](#)
- » [SLE staging dashboard](#)

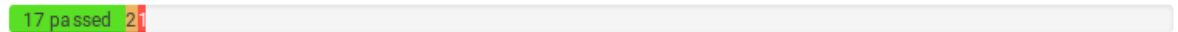


Acceptance: SLE 12 SP2 1.Server

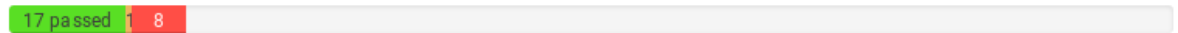
Build2122 ([about 5 hours ago](#))



Build2121 ([about 5 hours ago](#))



Build2120 ([about 7 hours ago](#))



Acceptance: SLE 12 SP2 2.Desktop



Shiny user interface



All Tests Job Groups ▾

Logged in as oholecek ▾

5 jobs are running

Show 10 ▾ entries

Search:

Medium	Test	Progress	Started
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● kde@64bit	19%	13 minutes ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● ext4@64bit	81%	13 minutes ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● lvm@64bit	19%	13 minutes ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● cryptlvm@64bit	19%	13 minutes ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● gnome@64bit	18%	13 minutes ago

Showing 1 to 5 of 5 entries

Previous Next

Last 300 finished jobs

Show 10 ▾ entries

Show only relevant jobs

Search:

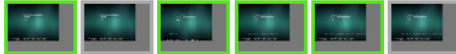











Medium	Test	Result	Finished
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● lvm@64bit	48★3☆13🔗	about 18 hours ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● gnome@64bit	44★6☆13🔗	about 18 hours ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● kde@64bit	55★5☆	about 24 hours ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● cryptlvm@64bit	49★3☆13🔗	about 24 hours ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● ext4@64bit	16★	a day ago
Build20160720 of opensuse-Tumbleweed-DVD.x86_64	● cryptlvm@64bit	53★3☆9🔗	2 days ago

Shiny user interface

Results for opensuse-Tumbleweed-DVD-x86_64-Build20160720-ext4@64bit

Result: **passed** finished [a day ago](#) (27:25 minutes) 

[Details](#) [Logs & Assets](#) [Settings](#) [Comments \(0\)](#) [Previous results \(7\)](#)

Test	Result	References
📁 installation		
bootloader	passed	
welcome	passed	
good_buttons	passed	
installation_mode	passed	
partitioning	passed	
partitioning_filesystem	passed	
partitioning_finish	passed	
installer_timezone	passed	
logpackages	passed	
installer_desktopselection	passed	
user_settings	passed	
installation_overview	passed	



Shiny user interface

























firefox_audio passed

Results for opensuse-Tumbleweed-DVD-x86_64-Build20160720-ext4@64

Result: passed finished a day ago (27:25 minutes)

Candidate needle: 100%: DTMF-159D-2

Details Logs & Assets Settings Comments (0) Previous

Test	Result	References
Installation		
bootloader	passed	  
welcome	passed	 
good_buttons	passed	
installation_mode	passed	
partitioning	passed	
partitioning_filesystem	passed	  
partitioning_finish	passed	
installer_timezone	passed	
logpackages	passed	  
installer_desktopselection	passed	  
user_settings	passed	  
Installation_overview	passed	 

Shiny user interface



All Tests

Job Groups ▾

Logged in as oholecek ▾

Results for opensuse-Tumbleweed-DVD-x86_64-Build20160720-ext4@64bit

State: **running** started [15 minutes ago](#)  

Assigned worker: sleposbuilder:4

[Details](#) [Live View](#) [Logs & Assets](#) [Settings](#) [Comments \(0\)](#) [Previous results \(8\)](#)

Running Module: install_and_reboot

Interactive: No 

Waiting for input: N/A



[Slide Show](#)

[Details](#)

[openSUSE Release Notes](#)

Performing

Actions performed:

```
Creating list of finish scripts to call...
Copy files to installed system
* Copying files to installed system...
* Copying system files to the installed system...
```









Shiny user interface

Results for opensuse-Tumbleweed-DVD-x86_64-Build20160720-kde@64bit

Result: **softfailed** finished [about 24 hours ago](#) (01:34 hours) 
Clone of [810](#)

[Details](#) [Logs & Assets](#) [Settings](#) [Comments \(0\)](#) [Previous results \(6\)](#)

Results for *opensuse-Tumbleweed-DVD-x86_64-kde@64bit* (latest job for this scenario)

Result	Build	Finished
 amarok chromium +4	20160720	2 days ago (01:46 hours)
 amarok chromium +7	20160720	3 days ago (01:54 hours)
 chromium gnucash +4	20160720	about a month ago (01:47 hours)
 gnucash hexchat +2	20160720	about a month ago (01:38 hours)
 amarok firefox_audio +4	20160720	2 months ago (01:34 hours)
 bootloader	20160720	2 months ago (00:34 minutes)


Shiny user interface

Results for opensuse-Tumbleweed-DVD-x86_64-Build20160720-kde@64bit

Result: **softfailed** finished [about 24 hours ago](#) (01:34 hours) 
Clone of 810

Details **Logs & Assets** Settings Comments (0) Previous results (6)

Result Files

-  Video
- vars.json
- serial0.txt
- autoinst-log.txt

Uploaded Logs












- chromium-journal.log
- chromium-loadavg.txt
- chromium-plasma5_configs.tar.bz2
- chromium-psaxf.log
- chromium-systemctl.log
- chromium-systemctl_status.log
- chromium-systemctl_unit-files.log
- chromium-Xlogs.log
- chromium-XSE.log
- consoletest_setup-loadavg_consoletest_setup.txt
- consoletest_setup-psaxf.log
- gnucash-journal.log
- gnucash-loadavg.txt
- gnucash-plasma5_configs.tar.bz2
- gnucash-psaxf.log
- gnucash-systemctl.log
- gnucash-systemctl_status.log
- gnucash-systemctl_unit-files.log
- gnucash-Xlogs.log
- gnucash-XSE.log
- hexchat-journal.log
- hexchat-loadavg.txt
- hexchat-plasma5_configs.tar.bz2
- hexchat-psaxf.log
- hexchat-systemctl.log

Results for opensuse-Tumbleweed-DVD-x86_64-Build20160720-kde@64bit

Result: **softfailed** finished [about 24 hours ago](#) (01:34 hours) 
Clone of 810

Details Logs & Assets Settings Comments (0) **Previous results (6)**

Results for opensuse-Tumbleweed-DVD-x86_64-kde@64bit (latest job for this scenario)

Result	Build
 amarok  chromium +4	20160720
 amarok  chromium +7	20160720
 chromium  gnucash +4	20160720
 gnucash  hexchat +2	20160720
 amarok  firefox_audio +4	20160720
 bootloader	20160720



Shiny user interface

Results for sle-12-SP2-Server-DVD-x86_64-Build2122-sles12_qa_userspace_apparmor_profiles@64bit

Result: **failed** finished [17 minutes ago](#) (07:59 minutes)
Clone of [568042](#)

Details

Logs & Assets

Settings

Comments (1)

Previous results (10)



rpaalthorpe wrote [17 minutes ago](#)
[bsc#994855](#)

(Automatic takeover from [t#524336](#))

Shiny user interface

Build2117 (a day ago)



Results for sle-12-SP2-Sea Build2116 (2 days ago) sles12_qa_userspace_apparmor 17 passed 3 failed



Result: failed finished 17 minutes ago (07:59 minutes)
Clone of 568042

Build2115 (2 days ago)



Build2114 (2 days ago)



Build2113 (3 days ago)



Build2111 (5 days ago)



Details

Logs & Assets

Settings

Previous results (10)

Limit to 10 / 20 / 50 / 100 / 400 builds, only tagged / all



Comments

rpaletnorpe wrote 17 minutes ago



bsc#99

(Automatic takeover from

yosun wrote 7 days ago (last edited 7 days ago)

Date: <2016-09-08 - 17:50> Build: 2099

Common issues: None

Arch: x86_64 **Status: Green

New Product bugs:

- sles12_qa_userspace_systemd -> [bsc#997867](#)

Existing Product bugs:

- sles12_qa_kernel_lvm2_120 -> [bsc#984321](#)
- sles12_qa_userspace_openssh -> [bsc#983784](#)

New testsuits/openQA-issues:

- none

Existing testsuit/openQA-issues:

- sles12_qa_kernel_ltp_controllers -> [bsc#889867](#)



openQA tests

There's more than one way to do it

openQA tests

There's more than one way to do it, but
sometimes consistency is not a bad thing either



“You can't ever go wrong with pearls.”

- Yes, it's perl

“You can't ever go wrong with pearls.”

- Yes, it's perl
- openQA test = test code + test loader + needles

openQA test loader

- ‘main.pm’
- loads individual modules
- maintains test order

```
loadtest "installation/welcome.pm";
if (get_var("MULTIPATH")) {
    loadtest "installation/multipath.pm";
}
loadtest "installation/good_buttons.pm";
if (get_var("ENCRYPT_CANCEL_EXISTING") || get_var("ENCRYPT_ACTIVATE_EXISTING")) {
    loadtest "installation/encrypted_volume_activation.pm";
}
if (noudatestep_is_applicable() && !get_var("LIVECD")) {
    loadtest "installation/installation_mode.pm";
}
if (!get_var("LIVECD") && get_var("UPGRADE")) {
    loadtest "installation/upgrade_select.pm";
    loadtest "installation/upgrade_select_opensuse.pm";
}
if (noudatestep_is_applicable() && get_var("LIVECD")) {
    loadtest "installation/livecd_installer_timezone.pm";
}
if (noudatestep_is_applicable()) {
    loadtest "installation/partitioning.pm";
}
```

test code

- openQA/os-autoinst APIs
 - testapi
 - mmapi
 - lockapi

```
sub run() {
  my $self = shift;
  # NET isos are slow to install
  my $timeout = 2000;

  # workaround for yast popups
  my @tags = qw/rebootnow/;
  if (get_var("UPGRADE")) {
    push(@tags, "ERROR-removing-package");
    push(@tags, "DIALOG-packages-notifications");
    $timeout = 5500; # upgrades are slower
  }
  # SCC might mean we install everything from the slow internet
  if (check_var("SCC_REGISTER", 'installation')) {
    $timeout = 5500;
  }
  my $keep_trying = 1;
  while ($keep_trying) {
    # try gracefully on aarch64 because of boo#982136
    if (check_var('ARCH', 'aarch64')) {
      my $ret = check_screen \@tags, $timeout;
      if (!$ret) {
        die 'timed out installation even after retrying' unless $keep_trying;
        record_soft_failure 'boo#982136: timed out after '. $timeout . 'seconds, trying again';
        $keep_trying = 0;
        next;
      }
    }
    else {
      assert_screen \@tags, $timeout;
    }
  }
}
```



test code

- openQA/os-autoinst APIs
 - testapi
 - mmapi
 - lockapi
- whatever you want
 - just don't forget to die when appropriate

```
sub run() {
  my $self = shift;
  # NET isos are slow to install
  my $timeout = 2000;

  # workaround for yast popups
  my @tags = qw/rebootnow/;
  if (get_var("UPGRADE")) {
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        record_soft_failure "boo#982136: timed out after $timeout seconds, trying";
        $keep_trying = 0;
        next;
      }
    }
    else {
      assert_screen \@tags, $timeout;
    }
  }
}
```

needles

- picture
 - screenshot from SUT
 - generated image
 - ...



needles

- picture
 - screenshot from SUT
 - generated image
 - ...
- JSON metadata
 - match areas
 - needle tags
 - ...



```
{  
  "area": [  
    {  
      "ypos": 149,  
      "height": 456,  
      "width": 933,  
      "type": "match",  
      "xpos": 49  
    }  
  ],  
  "properties": [],  
  "tags": [  
    "needle_in_heystack",  
  ]  
}
```

support for text based tests

- monitoring SUT serial port
- matching against regexp(s)
- included in testapi





Live demo



Questions?

Contacts

- <irc://chat.freenode.net/opensuse-factory>
- [mailto: opensuse-factory@opensuse.org](mailto:opensuse-factory@opensuse.org)
- [git@github.com:os-autoinst/openQA](https://github.com/opensuse/opensuse-factory)
- [git@github.com:os-autoinst/os-autoinst](https://github.com/opensuse/opensuse-factory)
- [git@github.com:os-autoinst/os-autoinst-distrib-openSUSE](https://github.com/opensuse/opensuse-factory)
- <https://progress.opensuse.org/projects/openqav3>



Join the conversation,
contribute & have a lot of fun!
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Thank you.



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